# NOTES ON SAMOAN COCCIDAE WITH DESCRIPTIONS OF THREE NEW SPECIES.

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During a recent visit to Samoa the senior author had an opportunity to collect a few Coccidae. No time was available to make a systematic search for these insects and the specimens collected were only such as were seen in the course of other work. As a list of these has been asked for, it seems desirable to publish the following brief notes with the descriptions of the three apparently undescribed species.

The collection includes the following species :—

*Asterolecanium bambusae*, Bdv. Very abundant upon bamboo.

*Coccus frontalis* (Green), *Coccus viridis* (Green), *Lecanium psidii*, Green, *Pulvinaria psidii*, Mask., on unidentified plants.

*Ceroplastes rubens*, Mask. Extremely abundant on mango.

*Saissetia nigra* (Nietn.). Host unidentified.

*Saissetia oleae* (Bern.). Common on oranges and several other plants.

*Saissetia hemisphaerica* (Targ.). On several different hosts.

*Eucalymnatus tessellatus* (Sign.). On unidentified host.

*Chionaspis citri*, Comst. Very abundant on orange.

*Chionaspis samoana*, sp. n.

Female scale white, elongated, widened posteriorly. Exuviae yellowish. Length of scale approximately 1·5 mm. Male scale not identified.

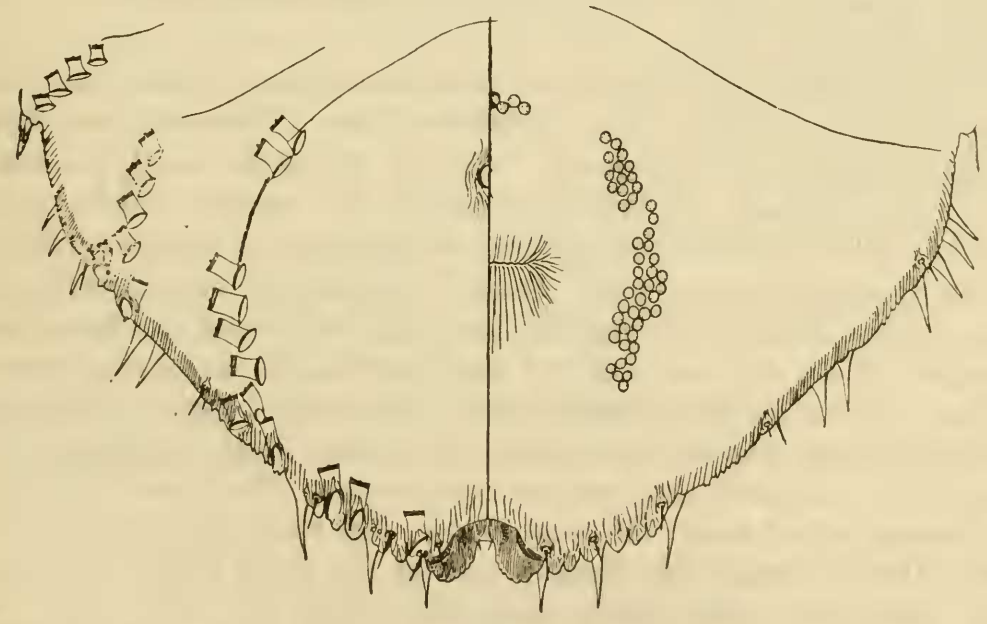

Fig. 1. Pygidium of *Chionaspis samoana*, sp. n.

Adult female elongated, about three times as long as wide. Abdomen slightly constricted between the segments. Three pairs of well developed lobes present. Median lobes conspicuous, their mesal margins fused for a short distance and then diverging rapidly. Discal margin rounded or slightly truncate and crenate. Second

and third pairs of lobes with two lobules which are nearly of the same shape and size. Lobules of the third pair of lobes short, broad, lateral margins finely crenate. Between the first and second lobes is a gland-bearing prominence, which in size and shape closely resembles the first lobule of the second lobe; between the second and third lobes is a similar but broader lobule-like prominence. There is a conspicuous gland spine (plate) between the first and second lobes, one between the second and third lobes, and one just beyond the third lobe. Near the anterior margin of the pygidium is a group of four gland spines and about half-way between these and the third pair of lobes are two more gland spines situated close together. The marginal spines of the dorsal side are near the lateral angles of the bases of the first and third pair of lobes and near the incision of the second pair of lobes. Circumgenital gland orifices in five groups, the cephalic group with four to six, the anterior lateral groups with about fifteen, the posterior-lateral groups with about thirty. The anterior and posterior lateral groups are, in some specimens, almost confluent. Dorsal gland orifices in three rows, the two anterior rows each consisting of four or five glands, the posterior row divided into two groups, of which the anterior contains two and the posterior four or five orifices.

On a species of palm, concealed beneath the woolly covering of the stems.

*Hemichionaspis aspidistrae* (Sign.). Very abundant upon several different hosts, including palm, banana and orange. There is a wide range of variation among our specimens, so much, in fact, that it seems doubtful if all should be referred to the same species. However the extreme forms are apparently all connected to the others by intermediate stages. A thorough study should be made of the group, using abundant material from various localities and host plants.

*Aspidiotus cydoniae*, Comst. On orange and an unidentified plant.

*Aspidiotus pangoensis*, sp. n.

Female scale circular or sub-circular, flat and rather thin and chaffy, of a brownish grey colour. Exuviae central, yellow. Diameter 2 mm. Male scale not identified.

Adult female pyriform or sub-circular, with the pygidium usually somewhat retracted into the abdomen. Body-wall, especially the margins, thickly chitinized and brown in colour, except for the pygidium which is clear. Length 1·2 mm.

Three well developed pairs of lobes present. Median pair heavily chitinized and conspicuous, rather slender, close together and with their mesal and lateral margins nearly parallel. From the base of each a short club-shaped thickening extends into the pygidium. Distal margins rounded, with a single slight notch. Second pair of lobes as long as or even longer than the first, of the same width and shape, but being much less heavily chitinized they are less conspicuous. Third pair about half the size of the second and of nearly the same shape. The marginal spines are arranged as follows: On the dorsal side there is one at the outer angle of the base of each lobe; and two, quite widely separated, beyond the third lobe; on the ventral side there is one at the outer angle of the base of the second and third lobes and two beyond the third lobe. The plates are as follows: Two with fringed tips between the median lobes, and two similar but wider ones between the first and second lobes; three with deeply cleft tips between the second and third lobes and five or six beyond the third pair of lobes, the first three of these being deeply divided, the remainder simple.

Grouped gland orifices either entirely wanting or present in two groups of but one or two to the group. From each group a very narrow chitinized strip extends posteriorly to meet a rather narrow, slightly chitinized area which extends in from the bases of the median lobes. Dorsal tubular spinnerets rather slender, irregularly scattered over the pygidium but a little more abundant posteriorly. Anal orifice about two-thirds of the way between the margin and the vaginal orifice.

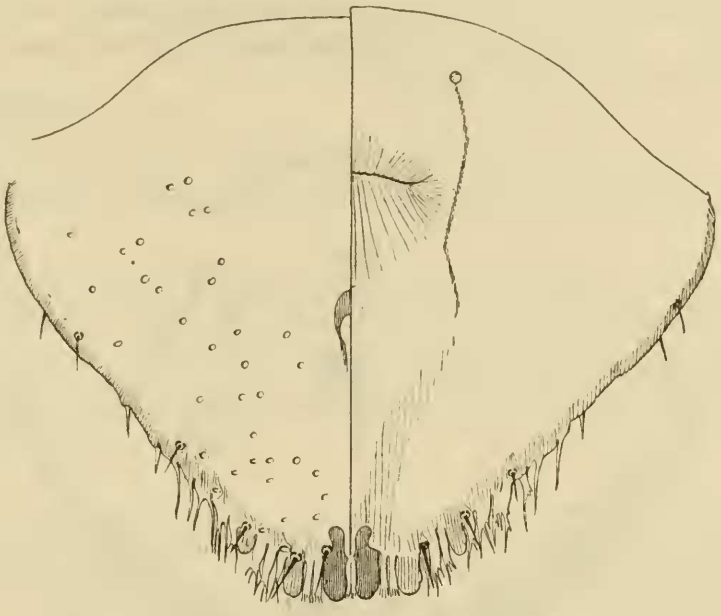

Fig. 2. Pygidium of *Aspidiotus pangoensis*, sp. n.

On cocoanut husks at Pango Pango and on an unidentified plant.

This species somewhat resembles *A. destructor*, Sign., but the scale is rather heavier and darker in colour, the body-wall more heavily chitinized, the lobes more distinct, the plates with fewer serrations. The ducts of the dorsal glands on *A. destructor* are rather long and most of them open on the margin, those of *A. pangoensis* are short and most of them open on the dorsal surface. Although we have examined many specimens we find the grouped spinnerets entirely absent or represented by a single gland on each side.

*Chrysomphalus rossi* (Mask.). On cocoanut husks at Pango Pango.

*Odonaspis secreta*, Ckll. Common on bamboo.

*Lepidosaphes beckii* (Newm.). Very common on orange.

*Lepidosaphes gloverii* (Pack.). On orange; apparently much less common than *L. beckii*.

*Lepidosaphes moorsi*, sp. n.

Female scale elongated, widened posteriorly and usually somewhat curved, almost always concealed beneath the epidermis of the bark of the host plant. Colour brown. Length 2 mm. Male scale not identified.

Adult female elongated, tapering toward the anterior margin, abdomen somewhat constricted between the segments. A single pair of lobes present which resemble very much the lobes of *Howardia biclavis*, Comst. They are rather triangular in shape, the mesal margin being shortest and the distal margin longest and finely

crenate. From the base of each a conspicuous club-shaped thickening extends into the pygidium, and this in turn is surrounded by a rather irregular area which is somewhat more heavily chitinized than the remainder of the pygidium. The characters of the margin of the pygidium are as follows: Laterad of the median lobes a gland pore on a slight prominence, followed by a narrow thickening; a spine on both dorsal and ventral sides; two broad, tapering gland spines; two gland pores; a spine on both dorsal and ventral sides; a gland spine; two gland pores; a spine on both dorsal and ventral sides, the one on the dorsum being nearer the median line than that on the venter; a gland spine; a gland pore. All the gland pores except the first are somewhat back from the margin.

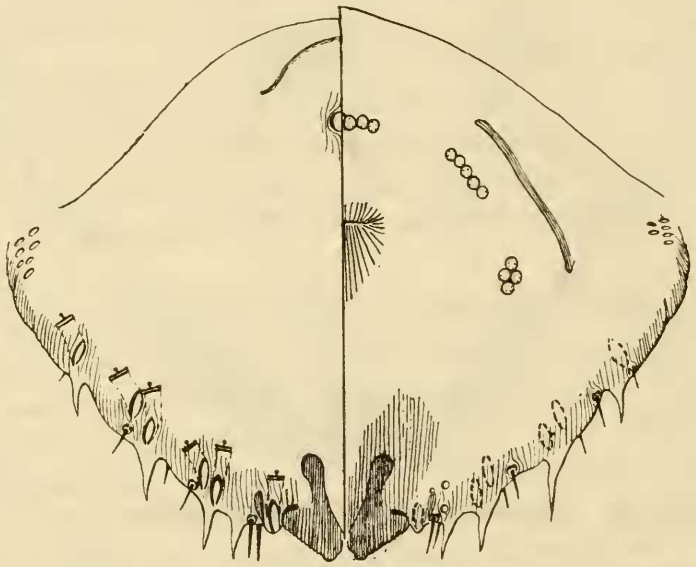

Fig. 3. Pygidium of *Lepidosaphes moorsi*, sp. n.

Circumgenital gland orifices in five groups, in which the cephalic group contains four or five, the anterior-lateral five or six arranged in a row, and the posterior-lateral four or five in a cluster. Immediately anterior to the two lateral groups is a narrow chitinized strip.

Vaginal opening about three-fourths the distance between the anal margin and the anal opening. A very narrow, curved, chitinous strip anterior to the anal opening.

Although this scale superficially resembles *Howardia biclavis*, Comst., both in its burrowing habit and in the shape of the median lobes, it is at once distinguished from that species by the presence of the circumgenital gland orifices. It is evidently quite close to *Lepidosaphes erythrinae*, Rutherford, a species recently described from Ceylon, which also has lobes of the same type, but it differs from that species in the absence of plates and spines between the median lobes.

On trunks of orange trees, near Apia.

Mr. H. J. Moors, on whose plantation this and several other of the species recorded here were collected, was untiring in his efforts to aid us in our investigations while in Samoa.

*Parlatoria cinerea*, Doane and Hadden. Common on orange.